



भारतीय प्रौद्योगिकी संस्थान गुवाहाटी
INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

TIH Division IITG TIDF

organizing a 5-day Hybrid Workshop from
26/06/2023 to 30/06/2023

on

3D Printing: Process and Applications

About CICPS

Center for Intelligent Cyber Physical Systems (CICPS) at IIT Guwahati is established to promote activities focused on Technology and Human Resource Development, located at IIT Guwahati Research Park, Research building with an objective of fostering industry-academia collaboration.

TIH Division IITG TIDF

TIH (Technology Innovation Hub) Division IITG TIDF is running various projects to develop technology for societal needs. Underwater exploration system for underwater monitoring and surveillance, intelligent tracking system for drone technology are a few to name.

About Workshop

This 5-Day hybrid-mode Workshop on additive manufacturing (3D printing) techniques with its applications in construction and biomedical industries encompassing both theory and Hands-on part through academic experts. The increasing demand of various additive manufacturing in different application sector leads to this inclusive workshop. It will impart a great deal of knowledge in the domain of manufacturing engineering. By completing this workshop, the participants will be able to explore various aspects/projects by themselves in the industry demanded topics related to various 3D printing processes.

Registration

Fee details:

Participants from IITG/Academia: 1000 INR

Other Participants: 1500 INR

Foreign Participants: 3500 INR

Registration Link: (valid till 19/06/2023)

<http://bit.ly/40OetkZ>

Please make the payment via details given below:

Bank: Canara Bank, IIT Guwahati

Account Name: IIT Guwahati Technology Innovation and Development Foundation

Account Number: 8652101030401

IFSC Code: CNRB0008652

Focus Areas

Topics to be covered:

- Introduction to 3D printing and additive manufacturing
- Introduction to concrete 3D printing and its application to construction engineering
- Introduction to bioprinting and applications in biomedical implant design
- Process Modelling for Additive Manufacturing
- Hands on experience of polymer-based 3D printing process (FDM & SLA)
- Hands on experience of metal-based 3D printing process (SLM & DED)

Workshop Organizers

Patron:

Prof. G. Krishnamoorthy

Vice-Chairperson,
TIH, TIDF IITG

Convener:

Prof. Santosha K. Dwivedy

Project Director
TIH, TIDF IITG

Coordinators:

Dr Sajan Kapil

Faculty Member
TIH, TIDF IITG

Dr. Shekhar Srivastava

Associate Project Engineer
TIH, TIDF IITG

Mr. Alok Singh Negi

Assistant Project Engineer
TIH, TIDF IITG



Dr Sajan Kapil is an Assistant Professor in the department of mechanical engineering at Indian institute of technology, Guwahati. He obtained his PhD from Indian Institute of Technology, Bombay. He is an expert of 3D printing processes and continuing his research in the domain of various manufacturing processes including the 3D printing. He has published articles on the machine tool development of 3D printing process, process planning strategies for the deposition of components through 3D printing, surface finishing processes and many more. He has delivered lectured in many national/international symposiums, seminars, conferences, and STCs.



Dr S Kanagaraj is a Professor in the department of mechanical engineering at Indian institute of technology, Guwahati. He obtained his PhD from Indian Institute of Technology, Kharagpur. He is an expert of biomaterials and bio-printing, biomedical device and implants, prosthetic and orthotic devices, and materials characterization. He has published articles in the domain of biodevice and bio-fabrication, 3D bio-printing, biomechanics and mechanobiology, bio-based composite manufacturing. He has delivered lectured in many national/international symposiums, seminars, conferences, and STCs.

Content of the Course:

- Introduction of AM processes
- CAD for AM processes
- Hybrid Additive Manufacturing
- Introduction to Concrete Printing
- Bioprinting
- Defect Modelling Approach in AM
- Software session of for STL file generation
- Hands on experience with FDM, SLA, SLM, WAAM 3D printer

Contact:

Dr. Shekhar Srivastava

shekharsri@nd.iitg.ac.in/+91-9876778576

TIH, TIDF IIT Guwahati

Mr. Alok Singh Negi

alok24@nd.iitg.ac.in/+91-9557541355

TIH, TIDF IIT Guwahati

Note:

1. Offline candidates will have to pay their accommodation charges in any of the hostel @ ₹ 300 per day as twin sharing basis.
2. ₹ 200 per day will be the charges of food (3 meals) in any of the designated hostel mess.



Dr Swarup Bag is a Professor in the department of mechanical engineering at Indian institute of technology, Guwahati. He obtained his PhD from Indian Institute of Technology, Bombay. He is an expert of mathematical modelling of manufacturing processes like welding and additive manufacturing processes and continuing his research in the domain of modelling of welding and additive manufacturing processes. He has published articles on the machine tool development of 3D printing process, process planning strategies for the deposition of components through 3D printing, surface finishing processes and many more. He has delivered lectured in many national/international symposiums, seminars, conferences, and STCs.



Dr Biranchi Panda is an Assistant Professor in the department of mechanical engineering at Indian institute of technology, Guwahati. He obtained his PhD from National University of Singapore, Singapore. He is an expert of concrete/composite 3D printing processes and continuing his research in the domain of concrete and other 3D printing processes. He has published articles on the fused deposition modelling, sustainable concrete printing, and many more. He has delivered lectured in many national/international symposiums, seminars, conferences, and STCs.

Lecture Schedule:

Day	Date	9.30 – 10	10 – 11.30	11.40 – 1	2 -3.30	3.40-5
1	26/06/2023 (Monday)	Inaugural Session	Introduction to Additive Manufacturing	CAD for Additive Manufacturing	Practice Session Software session for STL File generation	
2	27/06/2023 (Tuesday)	NA	Introduction to Polymer-based Additive Manufacturing (FDM and SLA)	Practice Session and Laboratory Demonstration FDM and SLA Printers		
3	28/06/2023 (Wednesday)	NA	Wire-based Additive Manufacturing	Powder-based Additive Manufacturing	Demonstration and Hands-on experience with wire and powder- based AM setups WAAM, DED Powder and SLM Printers	
4	29/06/2023 (Thursday)	NA	Introduction to Concrete 3D Printing	Case-Study on Concrete Printing	Hands-on experience with Concrete Printing facility	
5	30/06/2023 (Friday)	NA	Bioprinting	Hybrid Additive Manufacturing	Defect Modelling Approach in Additive Manufacturing	Valedictory Ceremony